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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,986	12/11/2003	David Hawley	21100.0094(7159-410)	5867

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Mitchell S. Feller
Hogan & Hartson, L.L.P.
875 Third Avenue
New York, NY 10022

EXAMINER

PASCHALL, MARK H

ART UNIT PAPER NUMBER

3742

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/731,986		HAWLEY, DAVID	
	Examiner		Art Unit	
	Mark H Paschall		3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6, 11-14, 20-22 and 27-30 is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-10, 15-19, 23-26, 31-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3,7-10,15-19,23-26 and 31-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muehlberger et al in view of Anderson et al.

Claims are unpatentable for the same reasons set forth in the rejection of July 13, 2004.

Allowable Subject Matter

Claims 4-6,11-14,20-22,27-30 are allowed.

The following is a statement of reasons for the indication of allowable subject matter. Reasons for allowable subject matter is set forth in the prior office action referenced above.

Response to Arguments

Applicant's arguments filed 01-13-05 have been fully considered but they are not persuasive. Applicant's remarks advance that the rejection of the claims in view of the prior art applied, even if proper, does not render the claims obvious. Applicant argues that the Muehlberger et al system has separate arc chambers and that there is no

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teaching in Muehlberger et al to provide an anode with arc attachment areas. Applicant should note that the separate chambers in Muehlberger et al converge into a central chamber or bore into which a central powder feed can be fed. The patent to Anderson et al is relied on for teaching use of an arc attachment area. The artisan in plasma processing is quite aware of the destructive nature of the arc and the erosion of consumable torch components due to the arc. There are many prior art plasma torch systems, which have arc attachment areas. Anderson is one of them and means 34 in Anderson in Figure 3A shows such an area. It is submitted that one of ordinary skill in plasma torch technology, is aware of the Anderson teaching, and would have found it an obvious modification to protect the arc attachment area in any plasma torch, knowing that such modification would lead to enhanced longevity for the torch components. Whether there are three (or more) electrodes or just one, the artisan is motivated by the Anderson et al teaching to protect the arc attachment areas, and is also aware of just where these areas are located in the anode. In Muehlberger et al the anode is common to all three cathodes and is only logical that the areas of the anode also common to arc attachment, would be protected. In view of the above the artisan would have found it obvious to provide arc attachment areas, protected from the arcs with a layer 34, as in Anderson et al. The independent claims such as claim 1 claim each attachment area is configured to provide a radially predefined attachment point for the arc. Applicant should note that all of the attachment areas would be located on the inner portions of the common anode 106 and that these areas are radially offset from the individual cathodes, as is any areas in common chamber 148. Barring further description of the

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term radially defined, radially defined is construed as radially offset from a common axis. The attachment areas in the disclosed invention comprise an elevation of the surface area of the central bore or anode. This does not comprise a point, but does comprise an area. Hence the subject matter is rendered obvious and unpatentable since both that claimed and Anderson et al teach an area in an anode that the arc attaches to as a radially defined attachment area (point). As per claim 2 note channel or central aperture 112, figure 26, through which both gas and powder are fed. Note that Anderson et al teach elevation of the arc attachment areas on all areas in the anode, and not just selected areas. The claims do not preclude such interpretation, and the claims defined as comprising allowable subject matter such as claims 4,11,20-22 and 27 further define this attachment area. As per claim 7 use of a particular material for the torch such as tungsten, is an obvious choice considering the widespread use of the same in plasma torches and such choice is dependent on the operating parameters of the torch and the end use of the torch. As per claim 10 copper use in the torch is likewise conventional and obvious, dependent on the end use of the torch. With respect to claim 15 note cooling channels in Muehlberger et al, and since the arc attachment areas are higher temperature, the heat removal rate would vary from that of other torch component areas. As per claim 33 note that anode member 106 is an integral member. New claims 35,38 define the arc attachment area as linear and attachment area 34 in Anderson et al is linear, barring further description of the same.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark H Paschall whose telephone number is 703 308-1642. The examiner can normally be reached on 7am - 3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (703) 305-5766. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MHPaschall
Mark H Paschall
Primary Examiner
Art Unit 3742

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